

IMPERATIVES FOR CHANGE 2011 PERFORMANCE REPORT



How Missouri Measures Up On Higher Education Goals

EDUCATIONAL ATTAINMENT

More than 60 percent of future jobs nationwide will require a college degree

Only 35 percent of the population ages 24 to 64 have an associate's degree or higher. Missouri consistently ranks below the national average in educational attainment.



Preparation

36 percent of recent Missouri high school graduates must take remedial course work and are unprepared for college level classes.



Participation

About 68 percent of recent Missouri high school graduates enroll in post-secondary education the fall semester following graduation.



Persistence

In 2009, Missouri exceeded the national average with 70 percent of full-time freshmen students from the prior year re-enrolling at the same institution. Still, Missouri has not made much progress over time on increasing this percentage.



Completion

Among students enrolling at a public 4-year institution in 2004-05, 55 percent had graduated with a baccalaureate degree by 2009-10. Among public 2-year students in 2007-08, 21 percent had completed by 2009-10, with another 20 percent transferring.



Affordability

Funding for state need-based financial aid has declined from \$92 million in 2008-09 to \$64 million in 2010-11.

CONTRIBUTE TO THE ECONOMY

Higher education contributes to economic growth

Even modest gains in educational attainment translate to improved economic performance for the state.



Workforce Needs

Missouri's postsecondary institutions have increased the number of degrees in science, technology, engineering and mathematics by five percent over the past year.



Competitiveness

Missouri ranked 33rd in the nation on the Kauffman Foundation's 2010 New Economy Index, a popular benchmark of economic competitiveness, moving up from 37th in 2008.ⁱ



Innovation

In 2009, the University of Missouri System and Washington University generated more than \$16 million in royalties and license fees associated with inventions, patent applications and business start-ups.



Professional Licensure

In 2010, 72 percent of licensure examinations for jobs in teaching, STEM or healthcare professional were scored as passing.

*In the context of this report, for nationally normed examinations, passing means scoring at or above the 50th percentile of test-takers.

INVEST IN THE FUTURE

State and local fiscal benefits amount to more than twice the amount state and local governments spend for every degree earned from public colleges



State Appropriations

In FY 2010, the state ranked 41st in the country in appropriations for higher education per student FTE, 42nd per \$1,000 of personal income and 47th per capita.



Research

Missouri institutions received more than \$1.6 billion in external research funding in 2010, up \$200 million over 2009.

EDUCATIONAL ATTAINMENT



Educational attainment is key to Missouri's future prosperity. Recognizing this, Missouri leaders have made increasing degree production a top priority. According to the Lumina Foundation, a nonpartisan postsecondary education think-tank, if current trends continue, just 45 percent of Missouri's working adult population will hold a college degree or certificate by 2025.ⁱⁱ This falls far short of the state's 60 percent goal, amounting to a deficit of almost 462,000 postsecondary credentials.

Closing this gap will require dramatic improvements in Missouri's traditional education pipeline. According to the most recent estimates, 77 percent of 9th graders in Missouri graduate from high school, and 60 percent of Missouri high school graduates enter college the following fall. Meanwhile, the numbers of credentials per student produced at Missouri public two-year and public bachelors/masters institutions fail to meet the national averages. If Missouri can match the performance of the top three U.S. states on each of these measures by 2025, the National Center for Education Management Systems estimates the state will produce enough additional postsecondary credentials to cut its attainment deficit by roughly 59 percent.ⁱⁱⁱ

Table 1: Percentage of Missourians Ages 24-64 Holding an Associate's Degree or Higher, 2004-2009

	Total	Minority
2004	33.77%	28.61%
2005	33.24%	27.56%
2006	33.48%	26.85%
2007	34.76%	27.57%
2008	35.05%	27.81%
2009	35.24%	28.33%
2025[†]	45%	30%

Source: U.S. Census, American Community Survey
†Projected

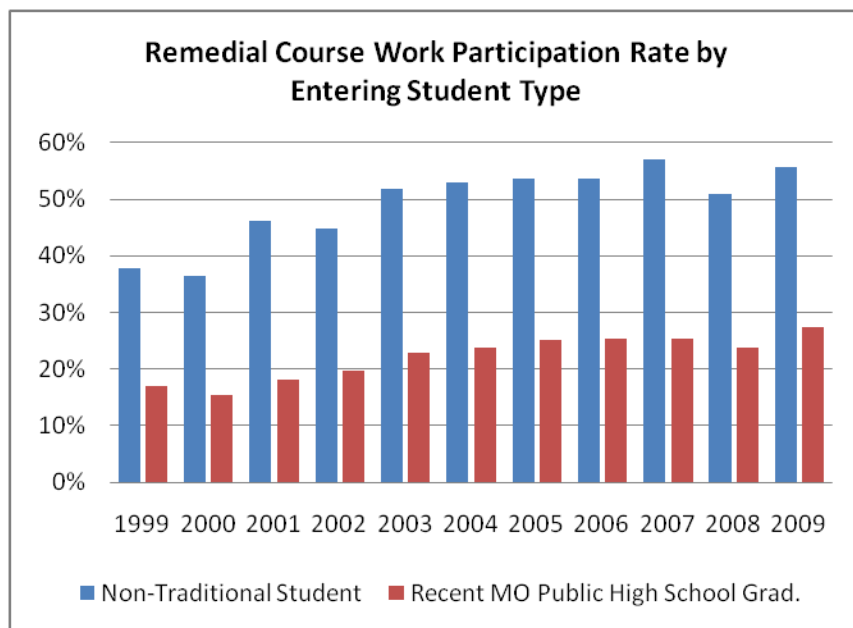
It is critical to support traditional students as they progress through the education system, but effectively engaging nontraditional students is also an important part of the solution. In Missouri's public colleges alone, about 40 percent of all associate's degrees and 21 percent of all bachelor's degrees are awarded to students ages 25 and older. Yet adult learners often face some of the steepest odds on the road to a degree. Especially among working adults, college is more likely to be secondary to supporting a family, and a larger proportion of working adults attend college part-time compared to traditional students, making it more difficult to accumulate credits toward degree completion. The Missouri Department of Higher Education estimates that among full-time degree-seeking community college students ages 25 and older, the chances of completing college may be reduced by as much as 65 percent compared to traditional students.

Only 15 percent of African-Americans and 15 to 20 percent of Hispanics in fourth grade today will one day graduate from college if current trends continue. Here in Missouri, 58 percent of white students, but only 40 percent of African-American students, graduate from 4-year institutions within 6 years. The disparity is even greater at two-year institutions where 24 percent of white students, but only 7 percent of African-American students, graduate within 3 years.^{iv} According to Measuring Up, the national group that issues higher education "grades" for all states, if all minority groups in Missouri had the same education and income potential as whites, the total annual personal income in the state would be about \$4 billion higher.^v

While nontraditional students may face different challenges compared to traditional students, the need to address college remediation cuts across all groups. In the fall of 2010, at least 36 percent of recent public high school graduates who enrolled in a public college or university required remediation. Among minorities, this figure increases to 50 percent, and among students who start college at age 25 or older, the rate is about 56 percent. Unfortunately, long-term trends suggest that these rates will continue to rise over the next few years unless stakeholders take decisive action to change course.

When students enter college academically unprepared, the chances of completing a degree decrease significantly. A 2008 study by Strong American Schools finds that 57 percent of students working toward a bachelor's degree at a four-year college complete their degree within eight years, while just 29 percent of students who require remediation complete their degree in the same timeframe.^{vi} Nevertheless, the relationship between college remediation and degree completion is far from simple. Some research demonstrates that the least prepared—those who require a full sequence of developmental coursework—may actually persist and complete college at higher rates than similar

peers placed in a higher-level remedial course.^{vii} This suggests that the barrier to completion that remediation imposes can be mitigated in part simply by placing students more appropriately.

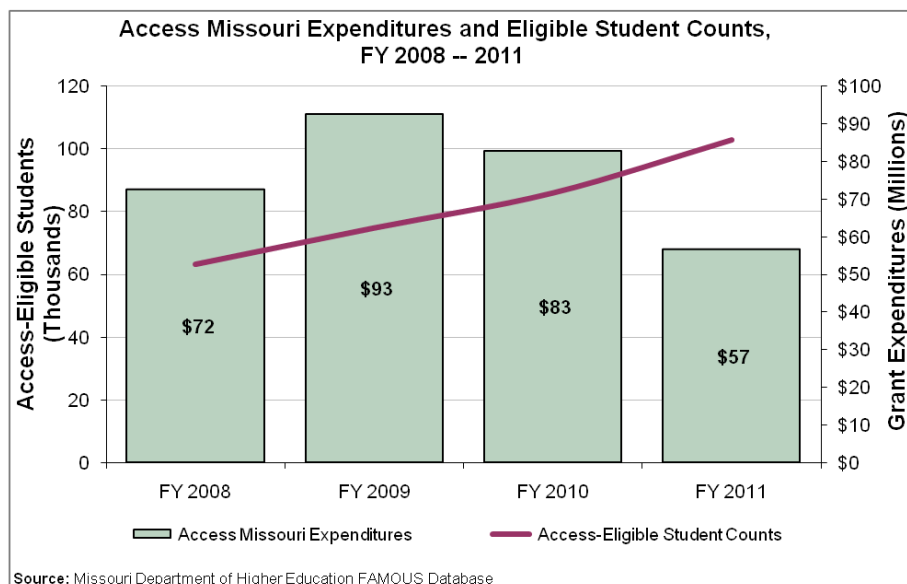


Affordability also contributes to students' chances of completing a degree. Studies show that unmet need—that is, remaining attendance costs after applying any financial aid or discounts—raises the probability of dropping out of college, and that financial aid increases the odds of persisting for

those with lower incomes.^{viii} While Missouri has held tuition costs relatively steady over the last three years, paying for college remains a challenge for many students. In 2008-09, the state's four-year public universities were less affordable than the U.S. average, requiring an average investment of 20 percent of the median income for Missouri households.

A balanced strategy to pave the way to a college education for economically disadvantaged groups must include targeted financial aid in addition to cost controls. While the state's need-based student aid program, Access Missouri, was fully funded in 2008-09, funding levels have since declined precipitously. In 2009-10, program funding levels were set at 78 percent of the statutory maximums, and in 2010-11, funding fell to 47 percent of the maximums, resulting in a reduction of more than \$1,000 to the average award. Research suggests that a \$1,000 increase in unmet need reduces a student's chance of completing college by as much as 13 percent.^{ix}

Missouri must do a better job of funding student access and success, but without adequate resources, state colleges and universities will



Source: Missouri Department of Higher Education FAMOUS Database

also struggle to support student achievement. A recent academic study reveals that state appropriations for higher education are strongly related to a state's baccalaureate degree production. Specifically, by investing 10 percent more in per capita appropriations, the state can produce 21,000 additional bachelor's degrees by 2025.^x Unfortunately, a difficult economic climate has caused declining appropriations to higher education in recent years.

The percentage of Missouri public college students who persist from the first year to the next has held relatively steady at around 70 percent since 2003. This statewide persistence rate exceeds the national average, but Missouri still has room for improvement. By promoting student engagement, academic behaviors and affordability, policymakers and college administrators can begin to make headway on college persistence rates. Ultimately, these efforts will pay off handsomely as every student who makes it to a second year is that much more likely to complete.

CONTRIBUTE TO THE ECONOMY



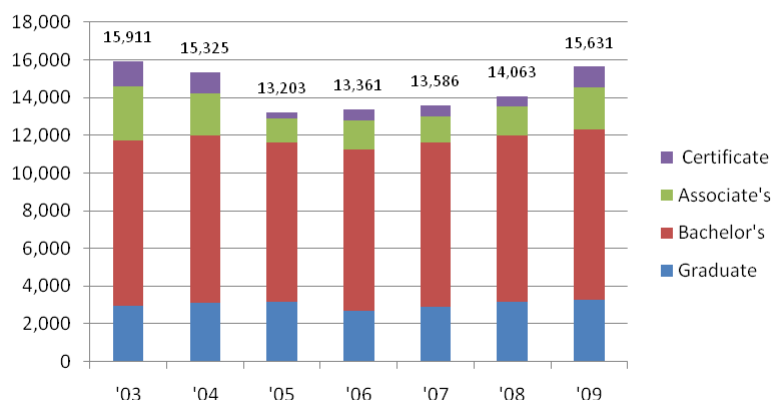
Higher education increases the value of Missouri's human capital. According to the Bureau of Labor Statistics, the 2010 unemployment rate among adults with a bachelor's degree was 5.4 percent, while the average unemployment rate across all education levels was 8.2 percent.^{xi} Additionally, research suggests that a bachelor's degree nets about \$800,000 more in lifetime earnings compared to those with just a high school diploma.^{xii} The typical university graduate also spends more than the average high school graduate, paying roughly 38 percent more in sales taxes.^{xiii}

Increasingly, the jobs of the future will demand highly skilled workers with a college education. A recent study estimates that 59 percent of all jobs in Missouri—about 1.8 million jobs in total—will require at least some college by 2018.^{xiv}

Many of these jobs will be in the fields of healthcare or science, technology, engineering and math (STEM). From 2008 to 2018, more than 114,000 job openings will occur in STEM or healthcare-related fields in Missouri, but if current trends continue, only 80 percent of this demand will be met.

Ironically, during the same time period, Missouri colleges are projected to generate more than 190,000 degrees and certificates in STEM and health areas of study, indicating that many of these graduates will either choose to work in another state or enter unrelated occupations.

Total STEM/Health Science Credentials Awarded in Missouri by Academic Year



Recent trends point to staggering enrollment growth in our nation's career and technical colleges, and corresponding growth in the production of occupational training certificates. In Missouri, the number of postsecondary certificates awarded annually has increased by about 84 percent over the last ten years. These credentials could be a key component of our economic recovery, giving students a fast-track to valuable work skills. Such programs may also be the best fit for many in our growing population of nontraditional students, who make up more than two-thirds of all enrollments at Missouri's private career and trade schools.

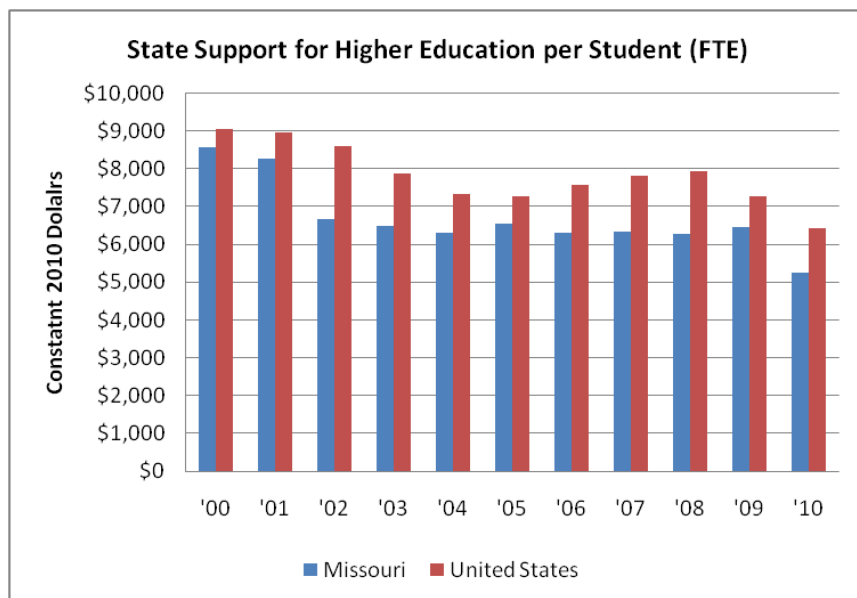
Higher education institutions directly interface with Missouri's workforce by partnering with local businesses to provide on-the-job training. In 2009, more than 47,000 individuals participated in institution-sponsored partnerships with companies like Boeing, 3M and ConAgra, often leading to long-term employment opportunities with the employer. In 2010, the number of participants in these programs declined to just more than 40,000.

INVEST IN THE FUTURE



Higher education is a good investment. Researchers estimate that those with a bachelor's degree pay roughly 2.5 times as much state income tax and 3.3 times as much federal income tax as the average high school graduate.^{xv} Overall, state and local fiscal benefits, such as reduced welfare expenditures and higher income taxes, amount to almost 2.4 times what state and local governments in the U.S. spend for every degree earned from public colleges. Conservatively, public funding of higher education has about a 3.1 percent average rate of return to state and local governments.^{xvi}

Investments in higher education pay dividends through research and development grants from corporate and federal sources, and resulting products and innovations. Missouri institutions spent more than \$729 million on research, a 2 percent increase from the previous fiscal year. Additionally, Missouri

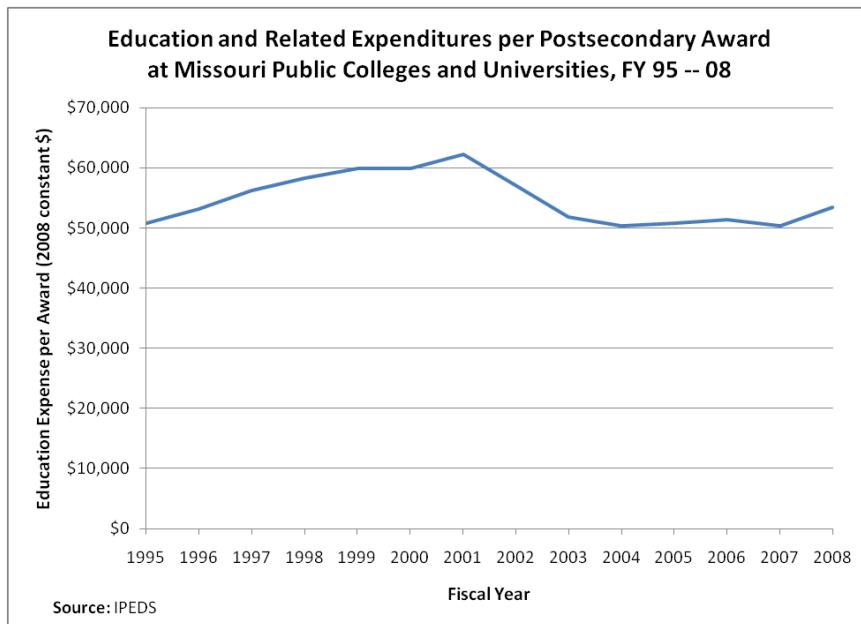


institutions received more than \$1.6 billion in external research funding in 2010, up \$200 million over 2009. Investments in research help lead to new innovations and the creation of knowledge in virtually every field. By dedicating significant resources to research and development efforts, higher education helps move all levels of the economy forward.

Yet state subsidies for public higher education in Missouri have fallen considerably over

the past decade. In 2010 constant dollars, state appropriations have declined by about 38 percent over the last ten years. Additionally, according to Grapevine's tabulations of comparative state fiscal support for higher education, between FY 2006 and FY 2011, Missouri increased state support of higher education by less than one percent, compared to a more than eight percent increase for all states.^{xvii} In terms of the change in appropriations per FTE (2010 constant dollars) over the past ten years, Missouri ranks 44th among U.S. states.

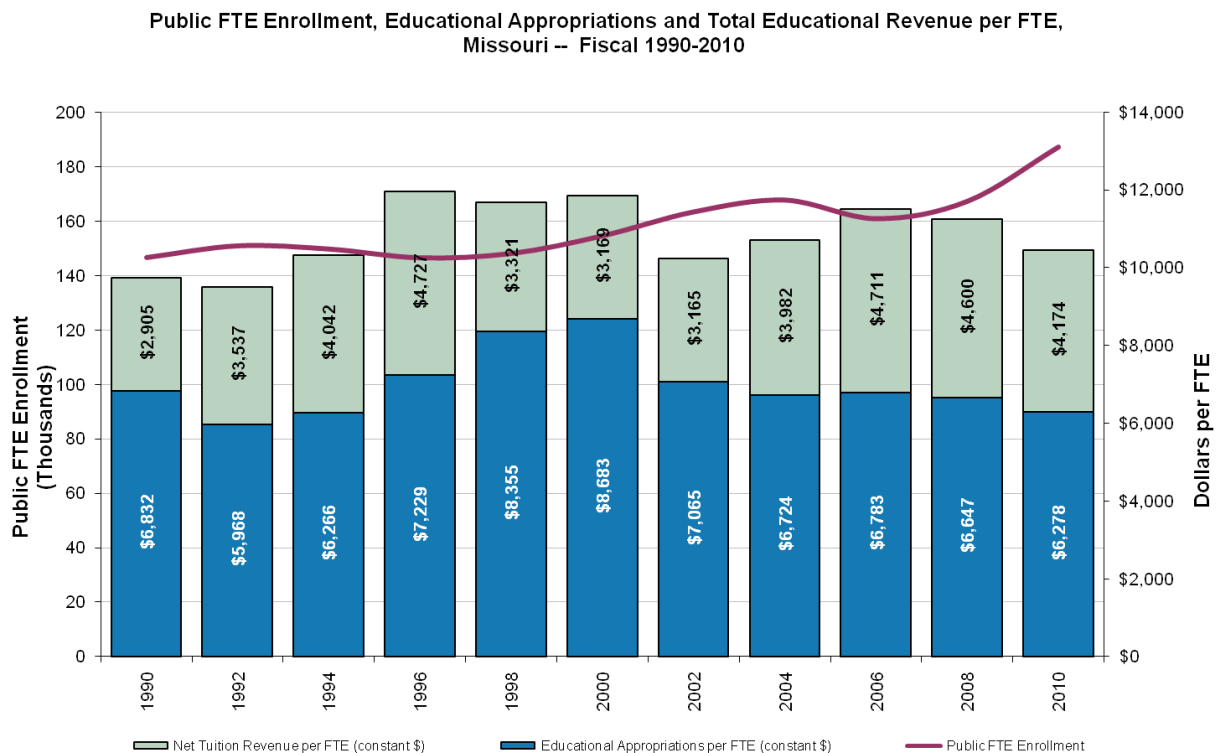
In these lean fiscal times, institutions may gain traction in their quest for better funding by pointing to the strides they have made in controlling costs. From 1995 to 2001, Missouri public institutions increased their amount of spending for every credential produced by over \$10,000 or 23 percent after adjusting for inflation. However, since then, colleges have become more efficient, reducing educational



expenses for every award conferred to just over \$50,000 each (\$53,000 in 2008). In fact, since 2003, the average annual increase in spending per credential has been less than one percent. By making an effort to increase efficiency, institutions demonstrate that taxpayer dollars for public higher education are well-spent.

Declining state support of higher education leads to higher tuition rates, adversely affecting

affordability and access. From FY 2000 to FY 2010, tuition revenues per FTE at higher education institutions have risen 32 percent, coinciding with an approximate decrease in state support of 38 percent over the last ten years. Although the total education revenue per FTE in 2010 is similar to the amount from 1990, almost \$1,300 more dollars per FTE are taken in via tuition revenues. Despite the variability over the past 20 years, it is evident that lower levels of state support necessitate higher levels of tuition revenue, making higher education in Missouri less affordable.



Note: Constant 2010 dollars adjusted by SHEEO Higher Education Cost Adjustment (HECA). Educational Appropriations include ARRA funds.
Source: SHEEO

Endnotes

ⁱ *The 2010 State New Economy Index: Benchmarking Economic Transformation in the States* (The Information Technology and Innovation Foundation, 2010, accessed 22 August 2011); available from http://www.kauffman.org/uploadedfiles/snei_2010_report.pdf, 7.

ⁱⁱ Dewayne Matthews, *A Stronger Nation Through Higher Education* [online policy brief] (Lumina Foundation, 2010, accessed 12 August 2011); available from http://www.luminafoundation.org/publications/A_stronger_nation.pdf, 59.

ⁱⁱⁱ *Student Flow Model* (National Center for Higher Education Management Systems, 2011). Courtesy of Patrick Kelly.

^{iv} *Missouri* (Complete College America, n.d., Washington, DC: Author, accessed 22 August 2011); available from <http://www.completecollege.org/docs/Missouri.pdf>, 2.

^v *Measuring Up: The State Report Card on Higher Education; Missouri*, (National Center for Public Policy and Higher Education, 2008, San Jose, CA: Author, accessed 22 August 2011); available from http://measuringup2008.highereducation.org/print/state_reports/long/MO.pdf, 3.

^{vi} *Diploma to Nowhere* (Strong American Schools, 2008, Washington, DC: Author); available from <http://deltacostproject.org/resources/pdf/DiplomaToNowhere.pdf>, 12.

^{vii} Angela Boatman and Bridget T. Long, *Does Remediation Work for All Students? How the Effects of Postsecondary Remedial and Developmental Courses Vary by Level of Academic Preparation* (National Center for Postsecondary Research, 2010), 21.

^{viii} Serge Herzog, "Measuring Determinants of Student Return vs. Dropout/Stopout vs. Transfer: A First-to-Second Year Analysis of New Freshmen," *Research in Higher Education* 46, no. 8 (December 2005): 901.

^{ix} M. Slater, "Strategic Tuition and Financial Aid Policies: Implications for Enrollment and Graduation" (PhD diss., University of Oregon, 2004).

^x Marvin A. Titus, "The Production of Bachelor's Degrees and Financial Aspects of State Higher Education Policy: A Dynamic Analysis," *The Journal of Higher Education* 80, no. 4 (July/August 2009): 456.

^{xi} *Education Pays...* (Bureau of Labor Statistics, 2011, accessed 12 August 2011); available from http://www.bls.gov/emp/ep_chart_001.htm

^{xii} Sandy Baum and Jennifer Ma, *Education Pays: The Benefits of Higher Education for Individuals and Society* (CollegeBoard, 2007, accessed 22 August 2011); available from http://www.collegeboard.com/prod_downloads/about/news_info/cbsenior/yr2007/ed-pays-2007.pdf, 10.

^{xiii} Phillip A. Trostel, "The Fiscal Impacts of College Attainment," *Research in Higher Education* 51, no. 3 (May 2010): 231.

^{xiv} *Missouri: Projections of Jobs and Education Requirements Through 2018*, (Georgetown University Center on Education and the Workforce, accessed 12 August 2011); available from <http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/missouri.pdf>, 61.

^{xv} Trostel, "The Fiscal Impacts of College Attainment," 231.

^{xvi} *Ibid.*, 242.

^{xvii} *Grapevine, Table 1* (Illinois State University, 2011, accessed 12 August 2011); available at <http://grapevine.illinoisstate.edu/tables/index.htm>